

DaimlerChrysler AG

## Patent claims

- 5 1. A method for producing a bent double-walled component (10), in particular a double-walled pipe, which comprises an inner pipe (11) and an outer pipe (12), with an intermediate space (13) being provided at a distance (d) between the inner  
10 pipe and the outer pipe, with the following steps:  
- providing the inner pipe (11) and the outer pipe (12),  
- providing at least one intermediate piece (16),  
15 the thickness of which essentially corresponds to the distance (d) and which is either placed onto the inner pipe (11) or is placed into the outer pipe (12), the intermediate piece (16) only filling part of the intermediate space in the axial direction (I) of the component (10),  
20 - bringing together the inner pipe (11) and the outer pipe (12) to form a composite structure, and  
- bending the composite structure formed from the inner pipe and the outer pipe.
- 25 2. The method as claimed in claim 1, in which the intermediate piece is designed in the form of a ring (16).
- 30 3. The method as claimed in claim 1, in which a plurality of intermediate pieces in the form of rings (16) are arranged along a longitudinal axis of the component (10).
- 35 4. The method as claimed in claim 1, in which the intermediate piece is designed in the form of a spiral (16') which extends along a longitudinal axis (I) of the component.

5. The method as claimed in claim 1, in which the intermediate piece is formed from a coating of an inner pipe (11) which has already been manufactured.  
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6. The method as claimed in one of claims 1 to 5, in which the intermediate piece (16, 16') is produced from a plastic.  
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7. The method as claimed in claim 6, in which the burning of the plastic essentially only converts it into low-molecular cleavage products.
- 15 8. The method as claimed in claim 6 or claim 7, in which the plastic is formed from a polyethylene.
9. The method as claimed in one of claims 1 to 8, in which the intermediate piece (16, 16') is placed onto the inner pipe (11) or is placed into the outer pipe (12) with a matching size.  
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10. The method as claimed in one of claims 1 to 9, in which at least one respective end of the inner pipe (11) and of the outer pipe (12) are at a distance from each other.  
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11. The method as claimed in one of claims 1 to 9, in which the outer pipe (12) is reduced in diameter at at least one of its two ends, so that the at least one end of the outer pipe (12) bears against the inner pipe (11).  
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12. The method as claimed in one of claims 1 to 9, in which the inner pipe (11) is increased in diameter at at least one of its two ends, so that the at least one end of the inner pipe (11) bears against the outer pipe and the inner pipe (11) is turned  
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outward in a tulip-shaped manner with respect to the outer pipe (12).

- 5           13. The method as claimed in claim 11 or claim 12, in which at least one welding connection is provided in the region of the contact point between the inner pipe (11) and the outer pipe (12).
- 10           14. A bent double-walled component (10), in particular a double-walled pipe, with
- an inner pipe (11) and an outer pipe (12), with an intermediate space (13) being provided at a distance (d) between the inner pipe and the outer pipe, and with
  - 15           - at least one intermediate piece (16), the thickness of which essentially corresponds to the distance (d) and which is arranged within the intermediate space (13), the intermediate piece (16) only filling part of the intermediate
  - 20           space in the axial direction (I) of the component (10).
15. The component as claimed in claim 14, produced by a method as claimed in one of claims 1 to 13.
- 25           16. The use of the component as claimed in claim 14 or claim 15 in an exhaust system of an internal combustion engine, with at least one end of the inner pipe (11) being connected to an adjacent
- 30           part (17) of the exhaust system by means of a sliding fit (18).